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1 RECORD OF ORAL HEARING
2 UNITED STATES PATENT AND TRADEMARK OFFICE

3
4 BEFORE THE BOARD OF PATENT APPEALS
5 AND INTERFERENCES

6
7 *Ex Parte* HIRONORI MIZUGUCHI

8
9 Appeal 2009-004580
10 Application 09/924,723
11 Technology Center 2600

12 Oral Hearing Held: September 10, 2009

13
14 Before JOHN C. MARTIN, KARL D. EASTHOM, and
15 CARL W. WHITEHEAD, JR., Administrative Patent Judges.

16 ON BEHALF OF THE APPELLANT:

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21 The above-entitled matter came on for hearing on Thursday,
22 September 10, 2009, commencing at 9:00 a.m., at The U.S. Patent and
23 Trademark Office, 600 Dulany Street, Alexandria, Virginia, before Victor
24 Lindsay, Notary Public.
25

1

2 MS. BEAN: Calendar No. 19, Mr. Thomas.

3 JUDGE MARTIN: Good morning, Mr. Thomas.

4 MR. THOMAS: Good morning.

5 JUDGE MARTIN: You can proceed whenever you're ready.

6 MR. THOMAS: I'll be representing the Nisi (ph) Corporation, and
7 this is Application Number 09/924,723. Before I begin, are there any
8 questions you might have?

9 JUDGE EASTHOM: One question we have is with respect to the
10 Lari-Jani reference.

11 MR. THOMAS: Yes.

12 JUDGE EASTHOM: You know, we understand that's a CDMA
13 system, correct?

14 MR. THOMAS: Yes.

15 JUDGE EASTHOM: And my understanding of the reference is that
16 in any CDMA system, and I think he mentions it in column 1 and column 2,
17 you're talking about controlling a plurality of mobile stations within a certain
18 cell?

19 MR. THOMAS: You're referring to the Lari-Jani reference?

20 JUDGE EASTHOM: Yes, Lari-Jani.

21 MR. THOMAS: Well, the way that goes about doing it is it's
22 controlling it link-by-link basis, so it doesn't take into account what the
23 levels on the other signals are. It is only based on the link itself, and it's
24 based on the bit-rate of that linkage, so --

25

1 JUDGE EASTHOM: Now, in a CDMA system, don't you -- what's
2 within a frame? What -- when you talk about a frame error rate, what's in
3 the frame?

4 MR. THOMAS: The frame corresponds to a set of signals that has
5 come in the -- in from a mobile station. The receiver picks up a -- for a
6 certain period of time it does -- it collects a set of data and it corresponds to
7 how much error is happening in that data, so it's also in that connection
8 between that one mobile station to the base station itself.

9 JUDGE EASTHOM: Well, I was under the impression that when you
10 have a CDMA system, it's -- now, correct me if I'm wrong, but each mobile
11 station has its own code, right?

12 MR. THOMAS: Yes, so it's multi --

13 JUDGE EASTHOM: And then it's also each station is transmitting in
14 a specific time frame within --

15 MR. THOMAS: Yes.

16 JUDGE EASTHOM: Now, how long is each one transmitting for, do
17 you know, roughly?

18 MR. THOMAS: I'm not certain of --

19 JUDGE EASTHOM: Would it be fair to say that it's less than five
20 seconds?

21 MR. THOMAS: Five seconds was an amount that was provided in
22 the Lari-Jani reference.

23 JUDGE EASTHOM: The Lari-Jani reference refers to measuring
24 errors for five seconds, but it doesn't say that that's only for one phone. In
25 other words, I wouldn't -- I would be surprised if each phone transmits for

1 five seconds because then how could they all talk at the same time and have
2 their own code? Is that your contention that each phone is talking for five
3 seconds?

4 MR. THOMAS: Well, the Applicant's invention is -- it's taking all of
5 them to get like all the data --

6 JUDGE EASTHOM: Yeah, I just want to clarify that about Lari-Jani
7 first if that's okay.

8 MR. THOMAS: Oh. Well, still our understanding of the Lari-Jani it's
9 still based on the figures and the description. It's all still based on just that
10 link corresponding to the mobile station itself if I can --

11 JUDGE MARTIN: Let me pursue -- while you're looking for the
12 Figure 1, if you could just explain what those outputs 14a-1 to 14n, what are
13 those? Those all representing one signal coming from one mobile station,
14 that's your position, right?

15 MR. THOMAS: In Figure 1?

16 JUDGE MARTIN: Figure 1, yeah. We've got all those outputs from
17 that -- we see the modulator 12, and they go to correlators and then they go
18 to adders. And you're saying that all that information is derived from a
19 signal coming from the single mobile station?

20 MR. THOMAS: In our invention, it's each receiver corresponds to a
21 particular mobile --

22 JUDGE MARTIN: Right, but in the reference I'm trying to
23 understand what's going on, what comes out of that receiver into modulator
24 12. Why are there so many output lines and what do they represent if they
25 all come from one mobile station and a particular measuring --

1 MR. THOMAS: Oh, in the Lari-Jani reference?

2 JUDGE MARTIN: Yeah, right.

3 MR. THOMAS: Oh, it is -- the signals, they could take multiple paths
4 and into these -- and then they all picked up -- still being picked up in a 1:1
5 ratio -- 1:1 form. And then that's -- those signals are being correlated and
6 then they're being, being -- for example, in Element 30, so it actually just --
7 the signals can take multiple paths and these -- the receiver and demodulator
8 correspond to that one mobile station, the link that's been made. They can
9 pick up those signals and the correlators and do whatever analysis it does.
10 And then it's all being -- in Element 30, and then it's sent to the decoder.

11 JUDGE WHITEHEAD: So it's your position that all these signals
12 stem from one mobile unit?

13 MR. THOMAS: Yes.

14 JUDGE MARTIN: But the -- is actually trying to find a mobile phone
15 out of a whole plurality of mobile phones that are transmitting at the same
16 time, isn't that correct? It's taking the noise away, that's what it's doing. It's
17 finding the -- code to find a signal for a phone.

18 MR. THOMAS: Well, the analysis still would be for that particular
19 phone link. I mean, that is the main distinction. One emphasizes that it
20 would still -- whatever adjustment that's being done, it would be for that link
21 for that phone, whatever phone connection that's been made. It would only
22 be for that and it would not be for -- by comparing all the other ones, the
23 errors of the other ones, to monitor if the -- the whole radio communications
24 of all those mobile stations has gotten worse.

25

1 JUDGE WHITEHEAD: Let's look at Claim 1, and it's got the
2 limitation a communication line circuit for -- radio communication with a
3 mobile station. Does that require multiple mobile stations or just one?

4 MR. THOMAS: Yes. It, it would require multiple mobile stations
5 and it would correspond to, for example, Figure --

6 JUDGE WHITEHEAD: 4?

7 MR. THOMAS: -- yes, Figure 4 where we collect -- there's receiver 1
8 through receiver and corresponding to mobile station 1 through -- and then
9 each one of them will determine an S&R like signal interference for each
10 one of those receivers. And all the data gets sent to the communications tape
11 monitor which uses all these data to determine if the condition has gotten
12 worse.

13 JUDGE WHITEHEAD: And so where is that in Claim 1? And I
14 know -- if you look at, look at Figure 4, Element 41 and 42. First, in
15 Element 41, if I'm not mistaken, that's where it takes the average of the
16 signals brought in?

17 MR. THOMAS: That's where it looks at all the signals, and there are
18 different embodiments where the approach is different. One is to take the
19 average of the far signals and which are, which are described in the
20 dependent claims, and one is to see the -- if the TPC which corresponds to
21 the transmission patent -- like transmission -- if, if it should be increased or
22 decreased. So there's different ways the communications tape monitor could
23 go about changing the, changing the signal that's being sent back out, but
24 that is where all the determination is made. If the -- firstly, it just makes the
25 determination if it has gotten worse. So it decides that based on different

1 things, for example, the average you had mentioned or the total power of all
2 the interferences and uses that to determine if it should keep continuing to
3 increase the power because that just keeps making it worse or just leave it --
4 or actually reduce it so that we can get like better interference as we would
5 want.

6 JUDGE EASTHOM: Okay, what about column 4, line 1, starting at
7 line 66 so the cards are still another broad aspect. The invention may be
8 summarized as a statistical control block for use in a destination unit
9 communicating with at least one source unit.

10 JUDGE MARTIN: I'm sorry, could you tell us where that is again?

11 JUDGE EASTHOM: It's column 3, line 66 to column 4, line 1.

12 JUDGE WHITEHEAD: The Lari-Jani reference?

13 JUDGE EASTHOM: Yes, the Lari-Jani reference, yes. I guess it
14 seems to me this whole -- in the background of column 1, column 2 before I
15 answer that, the whole CDMA system is based on -- and the problem that he
16 mentions in, in column 2 is that when you have burst interference, if you
17 raise the signal level of all the mobile phones, then you're just going to raise,
18 raise the floor level which is exactly the problem you're confronting, isn't
19 that correct?

20 MR. THOMAS: The problem is -- yes, the problem is similar in
21 terms of the interference is affecting the other mobile stations, but here it's
22 talking about the bit-rate of the signal itself. Like say if there's -- for some
23 reason there's a burst that's happening with a faster rate, then it would
24 change the power level of that signal which is sending that -- for example,
25

1 the burst for that period of time, it would change that. For example, if it's
2 burst, then it talks about it on column 3, lines 5 through 10 --

3 JUDGE EASTHOM: Right, it changes each phone, but your claim
4 doesn't change anything. It's just judging and notifying, right? So this is --
5 Lari-Jani is determining the quality of noise based on a plurality of phones,
6 because each time one phone transmits, as you say, the Lari-Jani system
7 measures the signal noise based on that single phone signal. But all the other
8 noise -- all the other sources are transmitting also, so they're contributing to
9 the noise flow, isn't that correct?

10 MR. THOMAS: But, but it is --

11 JUDGE EASTHOM: It -- that's very -- if you could please -- oh, go
12 ahead, I'm sorry.

13 MR. THOMAS: Oh, I was just going to say the judging is of all of
14 them together, for example, getting the total of all of them, all of the mobile
15 systems. Even if the effect is there, it still is only judging it based on the bit-
16 rate of that one mobile station by itself.

17 JUDGE EASTHOM: Well, but it is measuring, it's measuring the
18 noise from each station, isn't that correct, from each mobile station from a
19 plurality?

20 MR. THOMAS: In Lari-Jani the, the controls being -- it's --

21 JUDGE EASTHOM: The bitter array is a function of the noise of all
22 the mobile units transmitting at the same time, isn't that correct? In other
23 words, it's a function of the noise ratio and the noise is a function of all the
24 other phones transmitting together.

25

1 JUDGE WHITEHEAD: So if you have a one phone transmitting, do
2 you have interference at all?

3 MR. THOMAS: Well, I still have to just -- it still -- based on our
4 understanding, it still is not implementing in a -- each one of them are taken
5 into account separately and then --

6 JUDGE EASTHOM: Well, let me ask you this: Let's assume that
7 you're right and Lari-Jani is only controlling each one at the same time. But
8 your claim isn't controlling -- Claim 1 doesn't control anything, right?

9 MR. THOMAS: It monitors and --

10 JUDGE EASTHOM: It monitors the noise from all of them, but it
11 doesn't do anything after that, right? It notifies the judging unit, but it
12 doesn't control the noise or modify the signal of any of the mobile units.

13 MR. THOMAS: Well, there are other, there are other independent
14 claims, for example, Claim 6 and 4, they just go into details as to specifically
15 transmitting the power based on the adjustment and stuff. So there are
16 definitely other claims that do that and also --

17 JUDGE EASTHOM: All right, well, let me -- maybe I can return to
18 my question. I'm sorry, I probably interrupted you a couple times, but
19 column 3, line 65 and column 4, line 1 where it says you're communicating
20 with at least one source unit. That would suggest to me that he's talking
21 about communicating with more than one.

22 MR. THOMAS: Well, definitely the -- more than one mobile unit
23 could communicate, but the -- I guess -- that the modification or the
24 monitoring would all have to be of all of them together. And that is -- even
25 if it is communicating to different or more than one unit, it is still -- the link

1 is being corrected, transmission power of the link is being corrected based
2 on that particular one. Even if there's interference from other units, it does
3 not -- the monitoring device in our invention takes each one of them, each
4 one of those S&R, for example, into account into determining what we
5 should do next. In, in the Lari-Jani one, it only looks into the -- specifically,
6 it only looks into the bit-rates themselves, for example, to calculate the
7 instantaneous or the average bit-rates themselves to determine for that link.
8 And it doesn't -- that's where the main distinction is that it is not taking all of
9 them into account --

10 JUDGE EASTHOM: Maybe we can hone in a little -- and it talks
11 about a chip rate. Now, what -- when they talk about a chip rate, what
12 exactly is a chip -- in other words, at column 5, they talk about a chip rate is
13 equal to almost a million chips per second. So is each phone -- and then it
14 talks about end pairs of data streams. Does each, each one of those data
15 streams considered a chip from a separate phone? It's -- I'm looking at
16 column 5, line 34 it begins.

17 MR. THOMAS: Yes, it is for that given mobile unit if you look at
18 around line 44. It, it says that it's -- the chip rate would, you know -- per
19 second, it corresponds to that given mobile unit. It is not, it's not, you know,
20 more than one or anything. It's for that given mobile unit and the chip rate is
21 how the data is being transmitted to the receiver.

22 JUDGE EASTHOM: So one phone will transmit at its chip rate for
23 how long, how many seconds?

24 MR. THOMAS: I --

25

1 JUDGE EASTHOM: It seems to be if each of us have a telephone
2 and I'm talking and you're talking, isn't it sampling us based on
3 milliseconds? I'm going to transmit in my time slot for a little while and
4 then it's going to pick up yours for a little while? It's not going to allow me
5 to talk for five seconds and then wait for you to talk for five seconds, is it?

6 MR. THOMAS: The, the word in the part you're mentioning about it
7 talks for, you know -- that, that will be for the packet transmission. And
8 here it, it actually has all the sending together. It's not in a package. This is
9 not -- that would correspond to the packet transmission for like, for example,
10 like text messages and so forth. But in this case, the signal -- my
11 understanding is it's continuous stream of data that's being sent from one
12 mobile station. I mean like throughout -- going down column 6, it, it
13 continues to talk about how the correlators are all for that, for the given
14 mobile unit. So the whole thing is all for just that mobile unit like on
15 column 6, line 12 -- or around line 12 -- let me see exactly, yeah, line 12
16 talks about how the correlation levels are associated with that given unit. So
17 everything is being done for that given one mobile unit, and it's different
18 than trying to look at all of the data by using a communication monitor.

19 JUDGE EASTHOM: Well, what about on the abstract where it says
20 this provides a smoothing effect of the interference induced to other users
21 and may result in increased cell capacity?

22 MR. THOMAS: Like I said, even if they use it for the burst, so in this
23 reference, they use the burst -- the instantaneous bit rate to determine it. But
24 even if they say they notice that this -- you know, there's a burst happening,
25 so they modify it, but they still only modify it for that one signal. So the

1 effect that's happening on the other things, they way they're going about it is
2 they -- say we increase or decrease whatever we do based on the bit rates,
3 they feel that they will have an impact on the other signals also. But that
4 still does not take into account each one of those other, other mobile units,
5 and that's what's being addressed in, in our Applicant's invention.

6 JUDGE WHITEHEAD: In the claim?

7 MR. THOMAS: Yeah, the first part of the claim where, where we're
8 taking -- so detecting the quality deterioration of the -- the whole
9 communication -- the whole radio communication with mobile stations. So
10 it corresponds to all of the -- like the quality of the radio communication
11 that's happening with all the mobile stations and the plurality of mobile
12 stations. So it takes, so it's taking all that into account when determining the
13 deterioration of the communications.

14 JUDGE WHITEHEAD: And that is in Claim 1, you said?

15 MR. THOMAS: That's -- detecting quality deterioration of the radio
16 communication with mobile stations, so -- and then there's other claims talks
17 about -- which detects a deterioration of -- for example, Claim 35 talks about
18 which detects a deterioration of communications state of radio
19 communication between base station and plural mobile stations. So that's
20 where the monitoring of all of these together would correspond to.

21 JUDGE MARTIN: Any further questions?

22 JUDGE EASTHOM: No, thank you.

23 JUDGE MARTIN: All right, thank you, Mr. Thomas. Do you have a
24 business card that you can give the court reporter?

25 MR. THOMAS: Yes.

1 (Whereupon, the hearing concluded on September 10, 2009).

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